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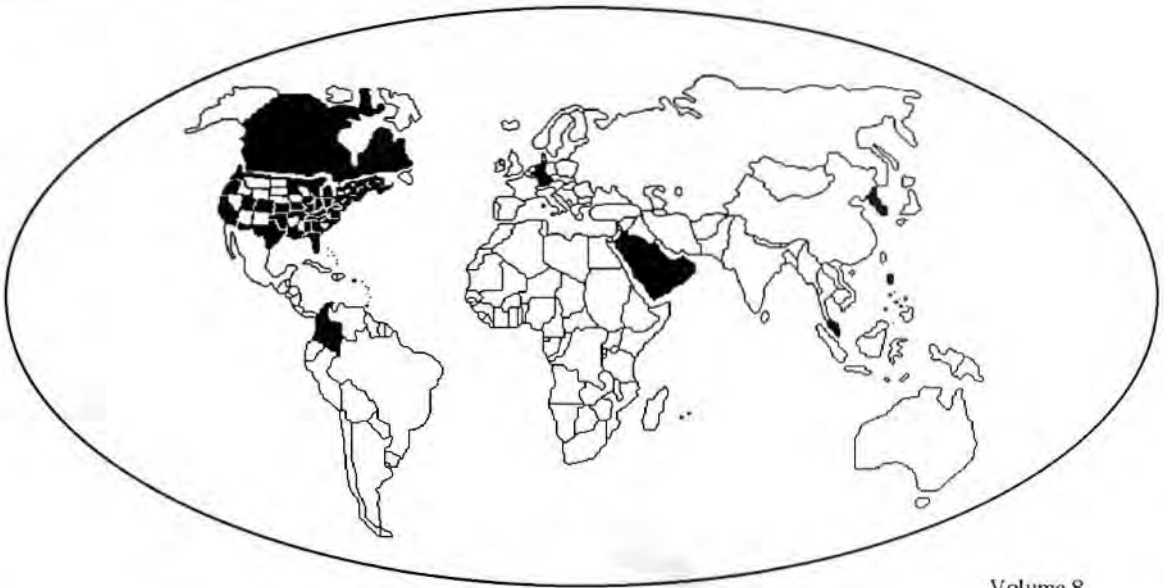
UA66/3/2 Computer Science Alumni Newsletter, Vol. 8

WKU Computer Science

Computer Science



Volume 8 June 1993

*WKU Computer Science Alumni

Alumni News Letter

WKU Computer Science

Alumni Newsletter 1992-93

INTRODUCTION

Welcome to the eighth edition of the Computer Science Alumni Newsletter! This is an especially significant one, as it includes a summary of the survey you completed last year. Dr. Robert Crawford, as editor, has selected a wide range of interesting articles, but we are not receiving many updates or news items about YOU! Consequently, this issue is noticeably bereft of alumni news. We have had a few notes during the past year about weddings, babies, new jobs, etc. but do not want to slight all the other news which surely transpired. This will truly be an "alumni" newsletter only when it contains lots of news about alumni! So, please send us your goodies (family, career, etc.) as soon as you can.

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Progress Report on Accreditation by the Computing Sciences Accreditation Board (CSAB)

Ken Modesitt

The Department will hear in August the results of the site visit by the CSAB representatives in October, 1992. An extensive two-day visit involved long consultations with faculty, students, administrators, and other staff on campus. The visitors inspected five major components of the program: faculty, students, computing resources, curriculum, and university support. To qualify for a positive recommendation, our program must be designed to prepare our graduates for "professional employment and progressive careers as computer scientists." This was where YOU came in at a vital point last year!

Several of you took the 20 minutes to fill out the survey in the alumni newsletter last year. The CSAB team looked on this very favorably, as did a number of other accrediting agencies. Your assistance was a key factor in our assuring them of the quality of our graduates. A summary of the results appears in the next article.

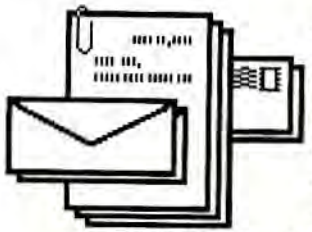
"When" we receive accreditation, we will join the ranks of about 150 sister institutions (out of the 1000 or so) who have also received such a stamp of approval. Watch your copy of the Communications of the ACM for the relevant article to see the name of Western Kentucky University -- your alma mater!

Results of Alumni Survey

Ken Modesitt

Enclosed is a summary of the results from the survey which a number of you completed last year and sent in. A variant of this survey will also be administered to employers and graduate schools. Your suggestions on this survey, as well as the one for employers would be very welcome! If you have some ideas on how to collect employer data, please let us know.**SHOULD YOU WISH TO ADD TO THE RESULTS, THE SURVEY QUESTIONS CAN STILL BE ANSWERED AND SENT IN TO:**

DEPARTMENT OF COMPUTER SCIENCE
WESTERN KENTUCKY UNIVERSITY
BOWLING GREEN, KY 42101



Just circle the appropriate responses and mail it back to us--the update will appear in the next edition of this newsletter. Based on the survey results, it is easy to see a number of strengths and points we must address:
-the growth of software engineering,
-the role of teamwork and the weakness of our program--now changing,
-increased use of various technologies:UNIX, OOPS, GUIs,CASE,
-vast increase in networking, and
-shift from main-frame to also include PCs, client/server, workstations.

As a department, we are trying to respond to your input, often by changing the curriculum, e.g., providing additional research opportunities at the undergraduate level,e.g., the Ogden Scholars, as well as graduate, via thesis, trying out an introductory course which provides an overview of CS, adding (optional) laboratories to the two introductory courses, making software engineering a core requirement, adding an upper-division course on C/UNIX incorporating X-windows, adding additional advanced graphics, experimenting with advanced technologies, such as fuzzy logic, neural networks, parallel algorithms and offering the telecommunication course more frequently. We are also making increased use of the student computing laboratories, which were highlighted in the newsletter last year.

Phonathon
Ken Modesitt

The year of 1992 marked the third time that Computer Science has participated in the annual University phonathon. This probably comes as no surprise to you, as you undoubtedly had a call from one of our student volunteers. What may be a surprise is that nearly $4,500 was pledged by you, including matching grants from your employers. THANK YOU!! It was disappointing, however, to discover that we had current correct addresses and phone numbers for only about 70% of you. Would sure appreciate your help in locating correct information for other alumni.

You can plan on hearing from some of our students again this coming fall -- thanks for listening to them and helping out -- again!

Computer Science Student Advisory Board (CSSAB)
Ken Modesitt

1992 marked the fourth year of this Board. It is composed of 10 students representing virtually all the types seen in the Department: freshmen, sophomore, juniors, seniors, graduate students, co-op, assistants, non-traditional, transfers, minors, etc.

During the last year, the members came up with many good ideas for improving the operation of the department. As one result, we are offering an increased emphasis on UNIX.

Computer Science Professional Advisory Board (CSPAB)
Ken Modesitt

The Computer Science Professional Advisory Board finished its third year during 1992-93. Members include:

Ashland Petroleum	Ashland,KY
Bell South	Louisville,KY
B.A.T.Industries,p.l.c.	Louisville,KY
Desa International	Bowling Green,KY
Humana Corporation	Louisville,KY
Logan Aluminum	Russellville,KY
NASA:Marshall Space Flight Center	Huntsville,AL
R.R.Donnelley&Sons	Glasgow, KY
TransFinancial BanCorp	Bowling Green,KY

These corporations have agreed to help the Department with "Quality Assurance" of our program. They have told us what expectations they have of our graduates -- that's YOU! Hence, it is doubly important that we hear from YOU re: whether or not these expectations match reality. These industry representatives also meet with faculty and the Student Advisory Board. A number of mutually beneficial arrangements have already occurred and more are in the offing. These include: employment of our graduates,

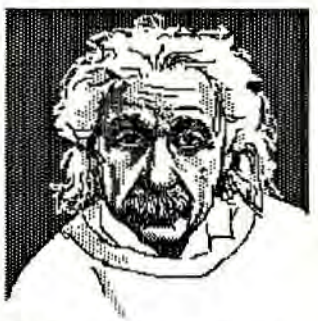
co-op and internship programs, field trips, site visits, joint research efforts, adjunct professors, etc. I am extremely enthusiastic about the reality of and potential for these interactions. Would be interested to know if any of you would like to have your company join, with perhaps you serving as the representative? Current plans only call for a meeting on campus once or twice a year, usually around interviewing times in the fall and spring. You could meet the faculty and learn more of how their research interests could be of help to your company. Your contributions could go a very long way in ensuring that CS at WKU is responsive to the "real world" of the computing industry.

As a result of the newsletter last year, B.A.T. Industries joined the CSPAB! Brian Stauss, a 1977 graduate of the program and a senior manager at work, read the newsletter and called me with a request for more information. It was a delight to meet Brian last fall!

Fuzzy Logic Course Offering

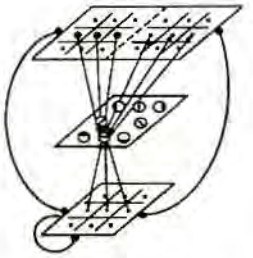
Art Shindhelm

This summer the CS475/G Topics Course will center on fuzzy logic. Interest in fuzzy logic has grown in both the United States and other countries. The U.S. is still far behind Japan in developing applications using fuzzy concepts. Recently, the 1993 International Fuzzy Systems and Intelligent Control Conference was held in Louisville, KY. Students in the summer course will supplement the text by presenting summaries of papers presented at that conference. In addition, fuzzy logic software assignments will be made. For more information about the course contact the instructor either by phone at 502-745-5011 or via Email at SHINDHELM@WKUVX1.BITNET.



Neural Networks Course

Uta Ziegler



Spring 1993 was the first time WKU offered a course in Neural Networks. A handful of curious students decided to give it a try.

The parallel nature of the paradigm has been (and to a lesser extent still is) confusing: a neural network is a whole bunch of connected elements, each one of which adds up its numeric input and determines a numeric output (to be transmitted as input to other elements). That meaning can be represented - and more importantly learned - in this manner was hard to believe. The students like to remind me of the time when one of them asked how they could tell whether an element had learned the 'right thing' and I said "You can't." The rest of the explanation -- that it is important that all the elements work together to produce a meaning and that the working of one individual element cannot be judged by itself -- got lost in the first shock.

But they caught on. Neural network structures for character recognition, hand-written zipcode recognition or reading an English text seemed to be quite interesting topics. And then there was the network which had learned to back-up a (simulated) truck to a loading ramp. I think several of them were hoping they could adapt that network to get a parking space in the overfilled student parking lots .

The students also saw a good deal of applied math: straight line, derivatives, gradients and even some differential equations.

Overall they seem to enjoy the class.

Twenty-Third Annual Sigma Xi Research Conference

Dr. Greg Baur and Dr. D. V. Pigford

Five undergraduate computer science majors participated in the Twenty Third Annual Sigma Xi Research Conference on April 1, 1993 at Western Kentucky University. Research topics included visulaization of algorithms, operating systems development, and multimedia programming with graphics, sound, and motion video. The following list gives the title, author, and professor involved in the research work:

"Developing Classroom Instruction Demonstration Software Using GAIGS Algorithm Visualization System" by Wiliam Todd Simpson with Carol Wilson.

"Design and Development of the Scheduler Subsystem of the Multitasking Object-Oriented Operating System (MOOS)" by Ross Hayden with Dr. D. V. Pigford. (Ross is a senior computer science major from Owensboro, KY.)

"The Design and Implementation of Barcode Controlled Videodisc Application in Computer Science: MICAL Research Project" by Rachel Scott with Dr. Greg Baur and Dr. D. V. Pigford. (Rachel is an Ogden Research Scholar and a senior computer science minor from Glasgow, KY.)

"Sound Utilization in Multimedia Programming with Authorware: MICAL Research Project " by Jenny Chiles with Dr. D. V. Pigford and Dr. Greg Baur. (Jenny is an Ogden Research Scholar and a junior computer science major from Cadiz, KY.)

"The Advantages and Disadvantages of Incorporating Quicktime Motion Video in Multimedia Programming: MICAL Research Project" by Sam Ware with Dr. Greg Baur and Dr. D. V. Pigford. (Sam is a sophomore computer science major from Clay, KY.)

The last three presentations involved the MICAL (Multimedia Interactive Computer Aided Learning) research project. This project, co-directed by Dr. Baur and Dr. Pigford is an ongoing project to produce effective and "intelligent" multimedia programs for local area networks.

Congratulations to all these students-and the computer science professors who directed these research projects.

WKU Computer Science Student Gets Summer Research Stipend

Uta Ziegler

Julie Tolliver, one of Western's Computer Science majors received a summer research stipend from the University of Alabama at Tuscaloosa. The money is made available by the National Science Foundation.

Julie gets to stay on the Tuscaloosa campus and will be involved in active research with the computer science faculty there - she hopes that she'll get to work in the area of Software Engineering - and she gets paid for all this. Not a bad deal. She is (mostly) looking forward to that experience.

Computing Resources Update

Ken Modesitt

After investing in 250+ PCs and Macs for students over the recent years, WKU has decided it is time to bring the entire faculty into the computer age. This summer, over 350 new PCs and Macs will appear on the desk of every full-time teaching faculty member who desires one! This is a major investment for the University, especially in these troubled financial times. As a consequence, the Department of Computer Science faculty has decided they would like to upgrade to a '486 platform in most cases.

Also coming this summer will be version 4.0 of Novell -- the local area network which will permit all of the now-disparate LANS across campus to be interconnected. Shortly, thereafter, all LANS will be able to tie into the VAX. Internet is also on the horizon. So WKU is truly engaging in "enterprise" computing, just as many of your corporations are doing.

ACM 1992-93

This year the local chapter of the Association for Computing Machinery (ACM) was lead by Dr. Greg Baur through a successful year of recruitment and fund raising. This year, we doubled our membership in the local chapter. The officers who lead the way were:
Lauri Goad, Chair for the first half of the year;**Baron Chandler,** son of Sandy Chandler, Chair for the second half of the year;**Tanya Hemmerle**, daughter of Robert and Peggy Hemmerle, Vice Chair; **Andrew Vanover,** son of Gail Vanover, Secretary / Treasurer.

Lauri left us in December to take a co-op job at the Toyota plant in Lexington and will return in the fall as Past-Chair.

This year marks the first year that this chapter has had a recycling program. To date, the recycling program has been our most popular money making idea. While this activity has not generated the most money, it has been the most popular.

Among our other ideas, we held a contest to pick a design for t-shirts and sweatshirts for the local chapter. Of the designs that were submitted, the one drawn by Nathan Sewell won the popular vote.

Once again this year, ACM sponsored an awards banquet for its members. Honored at this banquet were the outstanding Sophomore, Junior and Senior Computer Science students. Also presented at the banquet, was an award for the Outstanding Future Computer Professional. The outstanding Sophomores this year are Becky Dablow and Sam Ware, the outstanding Juniors are Julie

Tolliver and Janet Johnson, and the outstanding Senior is Cathy Cope. The Outstanding Future Computer Professional Award went to Andrew Vanover.

The officers elected to serve next year are:

Larry Fugate, son of Larry and Patricia Fugate, as Chair; **Heather Bayless,** daughter of John and Dr. Juanita Bayless as Vice-Chair; **Natalie Jones**, daughter of Robert and Patricia Jones as Secretary / Treasurer.

All in all, it has been a successful year for this chapter of the ACM. It is the sincere hope of the leaving officers that the next year be even more successful.

Crawford Defects

Robert Crawford

Abandoning any lingering notions of academic purity, Bob Crawford has jumped ship. Deserted. Gone over to the other side.

In other words, he has turned crassly commercial. His first product, Swift 3D Charts and Pictographs, was released in the fall of 1992 by Cosmic,Inc. Although it is a "low-end" business graphics product, it does feature color printing and some relatively unique chart types. It is selling briskly (for about $10) across the country in various outlets.

According to Crawford, the product development represented a great way to work, allowing him to concentrate on the programming while Cosmic looks after questions of marketing, tech support, and the like.

A second product (a set of fractal screen blankers for Windows) has been contracted for and will begin distribution later this year. Crawford predicts it will "sell like popcorn". Even so, and though he says quarterly royalty checks are certainly nice, he is not yet ready to give up his day job.

WKU Graduate Receives Ph.D.

Samy Abunasser came to WKU nine years ago from Palestine to pursue a degree in computer science.Soon after he started the computer science program, he decided to have a second major in mathematics. In less than 3 1/2 years he finished both majors. He continued to attend WKU for a master in computer science. It took him about 1 1/2 years to get the M.S. degree.

Samy's goal was much higher than a master's degree

science. He started the Ph.D program at North Dakota State University in September of 1990. His interest was in expert systems testing. For his dissertation, he established the first methodology for expert systems testing and debugging and the first methodology for determining expert systems complexity; furthermore, he designed and implemented a new shell called SL5 for supporting the methodologies. He graduated from NDSU in April with his Ph.D.

Master Mayhew Delivers Cryptic Talk

Larry Mayhew

In March, 1993, Larry Mayhew spoke to CS Faculty and students about encryption: "Horror Tales from The Crypt: How to Lose Your Head Through Encryption." He discussed some techniques used by cryptanalysts to break ciphers and mentioned some of the very weak encryption techniques programmers have used. His moral: Even very good programmers are typically poor judges of the security of a cipher system.

[Editorial aside by Dr. Crawford:

Dr. Mayhew's talk was, as might be expected, excellent. Far more interesting than the above brief synopsis might indicate. Indeed, I felt that Larry's metacommentary (his term), which he included with this report on his talk, was more interesting than the report itself. Hence, here comes the metacommentary.

If you'll recall, my proposing this last year for inclusion was sufficient to jinx the talk and delay it a year. Be alert, therefore, for the possibility of a new jinx now. Since it (presumably) can't take the form of delaying the talk, it may, for example, take the form of destroying the machine on which the final copy is being edited.

Of course, if you're like me, you don't believe in jinxes. But then I'm reminded of the famous physicist (whose name, of course, escapes me), who was visited by a journalist for an interview. As he was invited into the physicist's study, the journalist noticed a horseshoe over the door to the study. He asked: "Why do you have a horseshoe up there?" "Because it's supposed to bring good luck." "But don't tell me that you, professor, of all people, believe in such superstition?" "No, I don't belive in it. But they tell me it brings you good luck whether you believe in it or not."

Maybe jinxes are the same way!

Well, I don't know who the physicist was either (although it sounds like Feynman), but I am here to assure you that there is absolutely nothing wrong with the machine on which the machine on which the finxxi?? *(%%xcykl; ajk;v s8&&#@ is being edddiiiixed.]

Authors Write a Second Edition of an Expert Systems Textbook

Dr. D. V. Pigford
and
Dr. Greg Baur

Dr. Greg Baur and Dr. D. V. Pigford have completed the revisions for their 1990 textbook, Expert Systems for Business: Concepts and Development. The new edition, entitled Expert Systems: Concepts and Development, will contain new sections on string manipulations, graphical tracing, Smartforms, and Dynamic Images for VP-Expert, an expert system shell. Other revisions include the addition of new examples, assignments, exercises, and test questions. These were increased from 25% to 50% in each of the specified areas. All new screens will be included in the new edition of the textbook. The book is designed as a textbook for professors teaching expert systems or as reference for practitioners in the field.

The book, scheduled for delivery by August 1993, will be divided into two parts; nine chapters on theory and eight modules on applications. The chapters and modules are written with parallel content; that is, if Chapter 6 covers the theory of an inference engine, then Module 6 covers the use of an inference engine with VP-Expert. The book will be packaged with the latest educational version of VP-Expert and another disk of VP-Expert program files discussed in the modules.

The accompanying instructor's manual has also been revised. Lecture outlines have been updated, new transparencies have been added, test banks have been enlarged, and programming solutions have been added.

The textbook and instructor's manual are being published by Boyd & Fraser, a Division of South Western Publishing Company, 20 Park Plaza, Boston, MA 02116. VP-Expert is a licensed product of WORDTECH INC., Orinda, CA.

Resignation

Ken Modesitt

As of June 30, 1993, I will no longer be Department Head of Computer Science. After a number of phone calls from colleagues from across the country with "offers I could not refuse," I have decided to take a management position in industry, once again. This was not an easy decision to make, but the department is in good shape, in my opinion. I can see differences (hopefully positive!) since my arrival in 1988, and the students,faculty and administration have been very good in responding to many of my ideas.

Loral,Incorporated is a Fortune 200 company based in New York City, with subsidiaries in about 20 states and four foreign countries. It employs over 28,000 people, mostly professional, and had sales of over $4,000,000,000 in 1992. I will be working for the Strategic Systems Operation of the Western Development Laboratories for Loral Aerospace. This group works with spacecraft, satellites, and electronic communications, and is the largest provider of training services for the Federal government, including NASA.

The position in the Baltimore/Washington, D.C. area is a brand new one, and includes setting strategic directions which involve the hiring/ managing of senior professionals from the following technologies: artificial intelligence, software engineering, computer-based learning, human factors, data and knowledge bases, networks and cognitive psychology. There will be extensive collaboration among these professionals, as well as with other divisions of the corporation. Additional joint partnerships will include universities, international research organizations, and vendors of commercial state-of-the-art software and hardware. This synergy will also be supported by many opportunities for professional development. I have been told to anticipate considerable travel, including abroad.

This position will provide a vast array of professional opportunities and challenges. Many people I have known over the last 30 years are working in these respective disciplines, so I look forward to renewing the relationships first-hand -- perhaps even to hire some of them. Who knows you might be hearing from me if you have the appropriate background!

If you would like to send me a note, my new address, as of July 1, will be:

Dr. Kenneth L. Modesitt
Manager, IR&D Technology Center
Strategic Systems Operation
Western Development Laboratories
Loral Aerospace
7100 Standard Drive
Hanover,MD 21076

Computer Science Faculty

Greg Baur

Robert Crawford

John Crenshaw

Ali Kooshesh

Larry Mayhew

Kenneth L. Modesitt

Darleen Pigford

Mary Furnish
New Departmental Secretary

Sylvia Pulliam

Arthur Shindhelm

Carol Wilson

Uta Ziegler

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e-mail on BITNET:Furnish@wkuvx1.

Department of Computer Science
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Bowling Green,KY 42101

Research and Scholarly Activity*
Department of Computer Science
Western Kentucky University
1992-93

President's Unrestricted Fund**

Faculty Member:	Grant Title	Total
Dr. Greg Baur	Multimedia Authoring Software Tools for the Macintosh	$2950
Dr. Ali Kooshesh	Purchase hardware and software necessary to emulate workstation environment using existing computing systems	$2750
Dr. D.V. Pigford	Computerized Drill and Practice for CS 145, Intro to Computing	$1514
Dr. Art Shindhelm	Purchase fuzzy logic software	$2300
Ms. Carol Wilson	Upgrade Pascal software and DOS in student labs, classrooms and faculty offices	$1920
	subtotal:	$11,434

National Science Foundation

Ms. Carol Wilson	Algorithm Visualization CS2	$8000

Summer Faculty Research Grant

Dr. Uta Ziegler		$4000

Ogden College Summer Grant Proposal Workshop

Dr. Ali Kooshesh		$1000

Faculty Development

Dr. Greg Baur	Conference Paper:	Association for Development of Computer Based Instructional Systems, Norfolk, VA	$ 560
Dr. D.V. Pigford	Conference Paper:	Association for Development of Computer Based Instructional Systems, Norfolk, VA	$ 560
Dr. Ken Modesitt	Conference Paper:	Association for Development of Computer Based Instructional Systems, Norfolk, VA	$ 940
Dr. Sylvia Pulliam	Conference Paper:	American Association for Advancement of Science, Boston, MA	$ 525
		Faculty Developement subtotal:	$2,585

GRAND TOTAL: $27,019

* Funded from outside Computer Science
**Now known as Faculty, Staff, Student Support Fund

MEF 5/11/92

WESTERN KENTUCKY UNIVERSITY
COMPUTER SCIENCE DEPARTMENT
ALUMNI SURVEY
MAY 1992

Results of Computer Science Alumni Survey

Surveys Mailed: Approximately 400 surveys were sent to former students.

Responses Received: 32 (as of November 19, 1992)

1. Computer Science degree(s) obtained at WKU:

BS 1977 (1) 1978 (1) 1979 (1) 1982 (2) 1984 (5) 1985 (7) 1986 (4)
1987 (6) 1988 (1) 1989 (2) 1990 (1) 1991 (1)

MS 1988 (1) 1991 (2) 1992 (1)

Option: Systems (10) Scientific (7) Business (9) Math and DP Minors (1)

No degree received but took courses during _____ (give approximate dates)

2. University degrees obtained elsewhere or in a different field:

BS	Civil Engineering	1983	W.K.U.
	Mathematics	1984	W.K.U.
		1984	W.K.U.
		1985	W.K.U.
	Accounting	1969	W.K.U.
	E. Engineering	1982	S.E.U. of China
MS	Computer Science	1979	Michigan State
		1989	Vanderbilt
		1992	Johns Hopkins
	System Management	1988	U.S.C.
	MBA	1982	Bellarmine College
		1993	U of L

Ph.D

3. Are you currently employed full-time? (28) part-time? ( )

4. Total years of full-time work experience in computer-related fields?
.5 (1) 1.5 (1) 3 (2) 4 (1) 4.5 (1) 5 (5) 6 (3) 7 (3)
8 (4) 9 (1) 10 (1) 12.5 (1) 13 (1) 15 (1)

5. Total years of part-time work experience in computer-related fields?
.5 (2) 1 (1) 1.5 (1) 2 (1) 2.5 (2) 3.5 (2) 5 (1)

Intern/CO-OP Research/Teaching assistant .25 (1) .5 (1) 1 (4) 1.5 (2) 2 (1)
Lab Assistant 1.5 (1) 2 (1) 3 (2) 3.5 (2)
Contract Programmer 1 (1) 2 (1) 3 (1)
Research/Teaching assistant
Other: Consultant in Lab
Summer Hire for W.K.U.
Computer Operator

6. If you are currently employed in the computer field, check off the items that most closely describe the primary focus of the company/entity you work for:

(4) Accounting
(2) Aerospace
(4) Banking and Insurance
(1) Computer Hardware Manufacturing
(6) Computer Service (installation and maintenance of hardware and/or software)
(1) Computer Sales and Marketing
(8) Contract Programming
(1) Education
(3) Engineering (other than Aerospace)
( ) Entertainment
(7) Government
(3) Manufacturing
(2) Military
(1) Publishing
(4) Retail (other than computer related products)
(12) Software Engineering
(2) Software Publishing
(3) Telecommunications
Other: Systems Consultant
Services (System)-Electronic Call Processing
Maintenance
Financial Services

7. **JOB TITLE INFORMATION:**
What is your current job title?

(2) Senior Project Manager
(2) Senior Associate Programmer
(1) Senior Software Developer
(4) Software Analyst
(2) Systems Consultant
(1) Systems Programmer
(2) Senior Associate Programmer
(3) Software Engineer
(1) Owner
(1) Programmer/Analyst
(1) Instructor/Coordinator Info.
(1) Client Systems Manager
(1) Senior Internal Policy Analyst
(1) Partner in Computer/Accounting Consulting Firm
(2) Computer Support Specialist
(1) Section Manager
(1) Senior Systems Engineer
(1) Technical Support Manager
(1) Research Engineering Supervisor
(1) Captain Communications Officer
(1) Lead Program Analyst
(1) Instructor Electronic Welfare Officer
(1) Professional Staff Member
(1) Staff Analyst

How many people do you currently supervise?
0-5 (2) 2 (3) 6 (2) 12 (1) 14 (1) 19 (1) 30 (1)
50 (1) 110 (1)

What is the job title of your immediate manager?

(1) Assistant Director of Technical Services
(1) Product Manager
(1) Site Manager
(1) Assistant Manager
(1) Director of MIS
(1) Micro Development Manager
(1) Head of Business Division
(1) Director, Systems Development
(1) MIS Branch Manager
(1) Branch Systems Manager
(1) Personnel Career Manager
(1) Systems and Programming Manager
(1) Financial Programmer Manager
(1) Director of Software Engineering
(1) Senior Software Engineer
(1) Software Dvelopment Manger
(1) Department Manager
(1) Vice-President MIS Operations
(2) Project Manager
(1) Division Vice-President
(1) Lieutenant Colonel
(1) Director of Customer Service
(1) Chief of Training
(1) Systems Manager
(1) Manager

What was your job title and year when you were first employed?

Programmer		1977
		1979
		1983
	(2)	1984
	(3)	1985
		1987
	(2)	1989
		1990
Software Developer		1988
Software Engineer		1984
		1986
Senior Software Analyst		1991
Manager, Educational Computing		1988
Senior Internal Policy Analyst		1989
Senior Associate Programmer		1991
Computer Support Specialist		1992
Systems Engineer Trainee		1985
Lieutenant Communications Officer		1984
Technical Staff		1984
Computer Analyst		1989
Junior Programmer		1985
Research Specialist		1980
Electronic Warfare Officer		1988
Programmer Analyst		1987
Management Assistant		1987

8. If you are working in a computer-related field, check off the items that most closely describe the primary activities of your current job:

(7) Administration/Line Management
(2) Computer Hardware Testing
(8) Customer Support
(16) Computer Programming
(3) Network Systems Management
(1) Sales and Marketing
(14) Software Design
(10) Software Maintenance
(12) Software Testing
(4) Teaching
Other: Manage Systems Development Teams
Consulting
System Implementation
User Support/Training
Documentation
Master's student in CS
Operations

9. In which of the following computer application areas have you had significant work experience?

(8) Administrative Data Processing
(3) Artificial Intelligence
(3) Compilers
(5) Computer Aided Engineering
(6) Computer Graphics
(10) Computer System Implementation
( ) Design of Digital Computers
(2) Image Processing
(10) Networks and/or Distributed Teleprocessing
(3) Numerical Computation
(5) Operating Systems
(9) Real-time Programming
(5) Simulation and Modeling
(15) Software Engineering
Other: Design and development of financial related software
Hardware configuration
SCANTRON Software Design
Accounting Software
Computerized Maintenance Management Systems (CMMS)
Purchased Software
Communications System
Software Testing Software
Operations Research
DBase Design
C
C++
Motif Programming
Unix
Application Design

10. If you are not employed in a computer-related field, describe your current job.

Currently employed with AT&T as systems consultant. Main activities include analysis of customer's telecommunication services and trying to optimize service and cost for account.

11. **GRADUATE SCHOOL INFORMATION:**

Current Program

Field:	School:
Computer Science	Johns Hopkins
	W.K.U. (2)
	Air Force Inst. of Tech.
MBA	Eastern Kentucky University
MB	University of Louisville
Business	Bellarmine

Completed Program (after WKU)

Field:	School:
M.S. Systems Management	U.S.C.
Computer Science	Michigan State
	Johns Hopkins
	Vanderbilt

Degree:	Ph.D.:	M.S.: (4)	Other:	Year:	1988
					1979
					1992
					1989

Courses Taken (after WKU)

Field: MBA School: University of Tennessee
Year: 1982-83

Field: Management School: University of Alabama
Year: 1987-88

Field: Computer Science
Type: CICS I, CICS II, Advanced Programming, CICS Dump Reading, DBZ Database Design, DBZ\SQL I, II, Easytrieve I, II, WordPerfect, Lotus, Multimate, MS\DOS

Items 12-18 are designed to be answered by students who have completed a degree in Computer Science at WKU. For items 12-18 circle the response which most closely indicates how well you agree with the item statement:

12. The Computer Science program at WKU prepared me sufficiently for my first job.

Strongly Disagree	Disagree	N/A	Agree	Strongly Agree
( )	(5)	( )	(17)	(10)

Comments: Have been as prepared as <u>anyone</u> at my work.

Although, I learned all of the basic skills I needed for my job, software production in the workplace is completely different from the was it was done in school.

My most beneficial courses were taken during graduate school. Being one of "few" MS(CS) holders in my department anything remotely related to Language Theory (CS544), Computer Theory (CS541), or Algorithmic Analysis (CS544) are generally sent to me.

W.K.U. has a very good program. I have worked with numerous software engineers who graduated from top schools, but weren't as knowledgeable as I.

In 1979, we had no "on-line" access to mainframes. However, access to IBM at UK and the 11-45 was good.

As a C.S. major, I was not "equipped" enough in business for the position I accepted. I would have profited more from the MIS degree offered at the time. However, the C.S. degree helped my technical abilities and logical abilities much more than the MIS degree could have.

Weak in Business area, but that was the 70's.

Well balanced! Good emphasis on technical writing.

Focus on solid understanding of computers and software, not just programming. Technical writing very important.

I went into the military as a communications officer and had little contact with computers until 1987.

Could have used more work with database design, programming, and CICS.

The strongest part of the program was the high quality of the teaching staff.

I feel that I had received a valuable foundation for both my job and graduate school. I was able to make equal contributions to the team project that I was initially tasked. UNIX and Sybase training were required, but not difficult.

More attention should be made towards MUS/JCL and editor tools such as ISPF and/or ROSCOE.

13. The required courses in the Computer Science program at WKU provide a comprehensive foundation in the computer field.

Strongly Disagree	Disagree	N/A	Agree	Strongly Agree
( )	(4)	( )	(21)	(6)

Comments: Need more network/work station orientated classes.

With MS program included

For the most part, I agree. But the program I was involved in, did not provide any micro-specific programming issues.

When I was there, UNIX was not taught. That is all I do now.

The field of computer changed so rapidly during 1983-87 that I doubt any school provide a complete foundation.

The more areas the student is introduced to, the better. Having a good introduction into a field for 1 semester is very adequate for making a student more marketable.

At that time, the "math" aspects were heavily followed.

Software Engineering and Telecommunications were the most useful--they were not required though. UNIX and Database design should be considered required/available.

14. My job requires that I continue to learn new computing techniques, beyond those I studied in my WKU Computer Science program.

Strongly Disagree	Disagree	N/A	Agree	Strongly Agree
(1)	(1)	( )	(12)	(18)

Comments: Most of my work focuses on digital circuit synthesis and simulation.

Essential. I stay on top of the latest technology. Our hot button right now is Client/Server.

Environment is constantly changing. Big emphasis on Relational Databases and use of DB1/SQL.

But that's technology isn't it?

Yes-such as ESDI, SCSI interfaces, Micro Channel....

Not in field anymore.

In this field, I believe I will always continue to further my education since this field is always changing and improving.

The Computer Science field changes too much, too fast for a university with limited funds to keep up.

Computing is not, and probably never will be, a static field.

UNIX, Sybase--Database Design for Client/Server Model, X-Programming, Motif, CASE tools. These are job-specific; training was available via employer.

My employer provides several in-house classes for almost anything anyone wants to take.

15. The computing facilities at WKU were adequate to meet the needs of the Computer Science program.

Strongly Disagree	Disagree	N/A	Agree	Strongly Agree
(1)	(10)	( )	(12)	(1)

Comments: This was '84-'86. Apparently, things are looking up at Western.

Yes, Porta-punch <u>tape</u> & a PDP-8 were adequate back then. Looks like your labs today are very well equipped for today's student.

Through <u>no</u> fault of the CS department. Most of my work is in a highly networked, workstation environment. The primary development environment is the UNIX OS (and hence the UNIX level. tools--make, lint, dbx, SCCS, etc.) with the aforementioned hardware.

Hope the punch cards have been thrown out.

More personal computers would have been helpful.

Most of education experience was on mainframes. Although, I feel that I have a solid foundation, most of my work experience has been on micro's. I believe that this is improving at WKU.

I never had a problem, but then I never waited till the night before it was due either.

Although services were available, I now see that other universities have much more equipment.

The facilities at the time were all IBM based stuff. No UNIX training.

W.K.U. always seemed a couple of steps behind in technology. It would be extremely hard for a university to keep up in this field without huge amounts of money!

Given the status of computing at Western at that time.

We were still a little behind in 1984, but was growing fast by 1985.

At the time, more variety of platforms would have benefitted the program.

16. The Computer Science program at WKU prepared me for the amount of teamwork required in my job.

Strongly Disagree	N/A	Disagree	Agree	Strongly Agree
(2)	( )	(11)	(11)	(1)

Comments: My particular application requires an extreme level of interdependence between platforms of code. I never used that at WKU.

As a college grad in a new job, yes.

Work load and WKU program seemed to more individual oriented. Not enough team project work.

I work on the complete system instead of partial system.

In '85-'86, I felt that there was not enough teamwork assignments.

I remember only having one class that involved a teamwork effort, but somehow our team got around that. This has turned out to be the biggest area of 'need' in my career. Several personal evaluations suggested the need to work in a team effort.

That I learned from my boss there, Brad Wilson. He "mentored" me to where I am.

I didn't have that many group projects at Western.

At the time, individual work was the only programming assignment given.

Was not assigned any projects involving a team effort; however, I believe team work to be a learned behavior and not a necessary course requirement.

Not enough emphasis on group or team environments prevalent in DP field.

There was some teamwork, at times even when it was not supposed to occur. I would have preferred more team assignments.

Teamwork and ethics are <u>essential</u> in progressing within any organization. More emphasis would never hurt.

At the time, all programming was done individually by students.

More Project team related assignments could be offered.

I would have liked to have participated in more team assinments.

17. The general education courses at WKU have been useful to me.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
( )	(2)	(3)	(20)	(6)

Most useful ones?

Business oriented (3)
Speech (1)
Technical Writing (10)
ALL! Mind can't live on CS, Physics & Math alone.
Accounting (2)
Logic (1)
Economics (2)
English/Literature (5)
Gourmet Cooking
Psychology (3)
Sociology (1)
Mathematics (1)
Physical Ed. (1)
Software Engineering (1)
Telecommunications (1)
Anthropology (1)
Geography (1)

18. The advising process at WKU has been useful to me.

Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
( )	(5)	(14)	(12)	( )

Comments: I never used my advisor.

Dr. Crenshaw still advises me when necessary. He helped to motivate me while I was an undergraduate.

Wasn't required of student to be advised at the time.

At the time I attended WKU, the advising process (departments other than CS) lacked a lot to be desired. I didn't have any problems with advising within the CS department. Also of note, some of my problems were due to transferring from a UK community College.

Required courses were pretty much set-not much advising was required.

I didn't get much advising; maybe because I kept getting passed around.

What are you talking about? Faculty advisors?

What advising process?

Never required or asked for advisement in relation to education.

My assigned advisor was less than helpful-actually discouraging. Students should be allowed to evaluate their advisor to see if proper guidance is given. I was fortunate to receive encouraging and helpful guidance from other instructors.

I should have made better use of what was available.

Co-op advisors were terrific.

19. Check those programming languages and application packages you regularly use in your current job.

Languages

(2) Ada
(11) Assembly
(3) Basic
(17) C
(10) C++
(10) Cobol
(3) Fortran
(2) Pascal
(7) 4GL's
(10) SQL
(11) UNIX Shell
(10) IBM JCL
Other: LISP, Prolog
Vendor-specific
Reporting languages
PL/1 (2)
RPG III

Packages

(4) CAD
(11) CASE/SE tools
(12) Database (mainframe)
(10) Database (micros)
(10) Desktop Publishing
(7) Drawing/Graphics
(14) Network Software
( ) Num/Data Analysis
(18) Productivity: WP, Spreadsheets, Utilities
(17) Windows
(9) X-Windows
Other: GNU, EMacs
Computerized Maint. Management System
Object Vision
PL/1 & PLAS
Object Vision
SES Workbench/design
Lotex
Publisher
Platinum

20. What computer hardware do you regularly use in your current job?

(23) IBM/Compatible PCs
(3) Macintosh
(1) HP
(1) Other micros:

(12) IBM mainframe/mini
(4) VAX
(5) CRAY
(4) Other mini or mainframes:
PC Link to anisys host
WANG
Unisys
Sun
AMPAHL
TANDEM

(11) Workstations:
RS/6000
PC & Knowledgeware
Intergraph
IBM II
Sparc stations (2)
Sun (5)
Clipper
Unix
HP 9000
OSF/1
VAX
CUSTOM

21. Are these networked? (21) Yes (7) No (1) Unsure

(20) System Name(s) and Types:

NOVELL NETWARE (8)
UNIX BSD over Ethernet hooked into Internet
VAX
IBM
LAN
WANGNET
Netware (3)
SUN (2)
Ethernet

22. What operating systems do you regularly use in your current job?

(5)	CMS	(5)	OS/2
(22)	DOS	(16)	UNIX
(1)	Macintosh	(3)	VMS
(10)	MVS	(13)	Windows

Other: AIX (2)
WANG VS OS
MDOS
DOS/VSE
UNICOS (Unix to CRAY)
CUSTOM

23. The classical software lifecycle is composed of development (of new systems or major upgrades to an existing product) and maintenance. Management of the process is also critical, as in the generation of new ideas, e.g. algorithms (R&D). What percentage of your workload is devoted to:

Research & Development (R&D): 2% (1) 5% (3) 10% (7) 20% (2) 30% (3) 40% (1) 50% (4) 90% (1)
Management: 10% (3) 20% (3) 25% (3) 40% (1) 50% (2) 60% (1) 70% (1) 93% (1) 100% (1)
Development: 5% (1) 10% (4) 15% (1) 20% (2) 25% (3) 30% (4) 40% (2) 60% (1) 70% (1) 80% (2) 90% (1)
Maintenance: 5% (2) 10% (7) 15% (1) 20% (3) 25% (4) 30% (2) 40% (1) 50% (1) 80% (1)
Other: Customer Service: 20% (1) 60% (1)
Documentation: 5% (1) 20% (1)
User Interaction/Training: 20% (1)
6% (1)
Use: 80% (1)

24. Please give a finer breakdown, if possible.

Development

Feasibility: Is this software necessary/possible?
2% (1) 5% (4) 10% (4) 15% (2) 20% (1) 50% (1)

Requirements analysis: What does the customer want?
5% (2) 10% (3) 15% (1)

Design: How should we build it?
3% (1) 5% (1) 10% (3) 20% (3) 25% (4) 30% (5) 40% (1)
80% (1)

Code: Build it
5% (1) 7% (1) 10% (2) 20% (5) 25% (1) 30% (4) 40% (1)
50% (2)
65% (1)

V&V: Did we build the correct product? Correctly?
2% (1) 5% (3) 10% (4) 15% (1) 20% (1) 25% (1) 30% (1)

Documentation: User and system
2% (1) 5% (7) 10% (4) 20% (2) 50% (1)

Other: System Testing/Parallels 4% (1)

Maintenance

Corrective: Fix the defects
5% (5) 10% (1) 20% (2) 30% (2) 40% (2) 50% (2) 70% (1)
80% (1)

Adaptive: Port to a new environment (OS, HW, Language, etc.)
5% (1) 10% (1) 20% (3) 50% (1) 65% (1)

Perfective: Add new or enhance existing features
5% (2) 10% (2) 20% (1) 30% (2) 50% (2) 60% (3)

Other: Purchased Software Upgrades 15% (1)

25. How many hours per week, <u>on the average</u>, do you spend in your professional career?

( ) less than 35
(3) 35-39
(18) 40-44
(4) 45-49
(3) 50-54
(1) 55-59
(3) 60+

26. Check any new computing techniques or application areas that you have needed to learn for your job since leaving WKU.

<u>GENERAL</u>
(21) New Languages
(20) New Machines
(24) New Operating System

<u>ENGINEERING/COMPUTER HARDWARE RELATED AREAS</u>
(7) CAD/CAM/CAE
(2) Digital Signal Processing
(15) Hardware
(5) Image Processing
(1) Other Engineering Topics
(6) Real-time Programming
(4) Repair/Upgrade
(5) Simulation/Modeling
Other:

<u>COMPUTER SCIENCE AREAS</u>
(15) Advanced Dbase Tools/Techniques
(2) AI Techniques
(11) CASE Tools
(17) Debugging/Testing Techniques
(4) Graphics
(17) Networks/Telecommunications
(11) OOP/OOD
(5) Operating Systems Management
(2) Parallel Programming
(11) Software Engineering Techniques
(10) User Interface Design
(8) Windows Programming
Other: X-Windows (2)
Operation Research

OTHER TECHNIQUES OR APPLICATIONS:

(15) Business Applications
(16) Interpersonal Skills
(18) Management Skills
Other: Sales
Business Writing

27. What distribution of effort best describes the amount of individual and teamwork required in your job?

Individual
5% (1) 10% (2) 20% (3) 25% (4) 30% (3) 40% (2) 45% (1)
50% (1) 60% (5) 75% (1) 80% (3) 90% (1) 100% (1)

With your department
5% (2) 10% (3) 15% (1) 20% (5) 25% (2) 30% (3) 40% (5)
50% (4) 60% (2) 65% (1)

With other departments
5% (2) 7% (1) 10% (3) 15% (2) 19% (1) 20% (5) 25% (3)
30% (6) 35% (1) 60% (1)

With other companies
1% (1) 3% (1) 5% (3) 10% (5) 15% (2) 20% (1) 25% (2) 40% (1)

28. Check those areas of your WKU education which have been most relevant to your job performance in the computer field.

HAD COURSE	RELEVANT	HAD COURSE	RELEVANT
(14)	(20) Business Courses	(11)	(11) Group Projects
(20)	(27) Classes with Writing	(1)	(6) Large System Design
(9)	(9) Computer Architecture	(7)	(11) Logic/Problem Solving
(7)	(4) C.S. Theory	(20)	(18) Mathematics
(25)	(31) Data Structure	( )	(6) Networks
(17)	(20) Database/Files	(17)	(17) Operating Systems
(7)	(3) Engineering/Physics	(22)	(24) Programming Languages
(3)	(4) Ethics/Societal Issues	(18)	(23) Programming Skills
(19)	(23) General CS Background	(5)	(10) Software Engineering

Other: Hardware Compatibility/Configuration
Communications/Speech (2)
Voice/Diction
Presentations
Co-op
Graphics

29. Check those areas of your WKU education which could have been strengthened by additional coursework. Include, if you wish, areas outside the computing discipline.

IN CS COURSES	OTHER
(7)	(11) Management Skills
(8)	(8) Oral Communication Skills
(7)	(8) Written Communication Skills
(11)	(2) C
( )	(1) Circuit Design
(9)	(2) Database Techniques
(9)	(3) Hardware/Software Interface Techniques
(5)	(1) IBM mainframe environment
(14)	(4) Networks
(13)	(3) Software Design and Development
(7)	(3) Software Quality Techniques
(12)	(3) UNIX/Operating Systems

Other: Logic Programming (comment by Thomas Mills)
"I believe a course that focuses on producing large software products in the same manner software is produced at the workplace would be very relevant. Such a course would include heavy dependance on platforms (libraries) would have to meet (tested) requirements (possibly written by the student) and must meet and be tested at incremental deadlines. This course could possibly be influenced by an informal survey of W.K.U. alumni."

(2) (5) Engineering/Physics
(5) (1) Mathematics/Logic
Other: Productivity tools
Psychology/Human Interaction

30. What do you see as the emerging computer technologies that ought to be taught in the WKU Computer Science program either as an elective or as a requirement? See attachment for current courses.

(2) CAD/CAM/CAE
(17) CASE/Other Software Engineering Tools/Techniques
(12) Distributed/Parallel Computing
(6) Embedded Systems/Real-time Programming
(5) Expert Systems *
(9) Fourth Generation Languages
(3) Fuzzy Systems
(10) Graphics/Animation
(8) Imaging Technologies *
(8) Multi-media
(23) Networks/Telecommunications
(7) Neural Nets
(9) New Hardware Trends
(15) OOP/OOD
(9) Popular Microcomputer Application Packages
(17) User Interfaces
(5) Various AI Topics
(11) Windows Programming
Other: Logic Programming
Strong C++ experience
Client/Server
More OS courses
Interoperability
X-Windows
Tool Kits
Co-op
Simulation/Modeling

* Strong Direction *
See large corporation headed in the 1990's from a business application perspective. (Brian Stauss)

31. Who or what sparked your interest in your current career?

(5)	Family			(2)	Organization
(3)	Friend			( )	ACM
(10)	Teacher:	( )	Jr. High	(4)	Money
		(6)	High School	(3)	Specific Course
		(4)	Univ.	(4)	General Science

Other: desire to be informed and involved in computers.

Job market, working conditions, retirement, health insurance.

Opportunity.

Needed a job.

Used computer in the Navy

Personal interest

32. If you had a younger sister or brother who wanted to major in Computer Science, would you recommend WKU?

(30) Yes ( ) No ( ) N/A

33. What is your gender? (7) Female (22) Male
(1) Declined to state

34. What is your ethnic background?
( ) American Indian
(1) Asian
(1) Black
( ) Filipino
( ) Mexican American
( ) Other Hispanic
( ) Pacific Islander
(26) White
(1) Other
(1) Decline to State

35. Did you work in the computer field either before or while you were a student in the Computer Science Program at WKU?

Yes (22) No (9)

36. Include any other information you think we should be aware of. Is there any question you think should be added to or deleted from this survey?

With the telecommunication craze in video, phone, data, and fax, it would be good to have a few more courses devoted to the topic which are independent study in nature. Communications programming is a big field (lucrative too).

Emphasis on co-op/intern program. My opinion is that at least the co-op/intern program should be mandatory.

Delete question #36

EMPLOYER AND SALARY OPTIONAL:

37. Cabinet for Human Resources
DEPARTMENT FOR EMPLOYMENT SERVICES
DIVISION OF ADMINISTRATION & FINANCIAL MANAGEMENT
MANAGEMENT INFORMATION BRANCH
Frankfort, KY

Fresenius USA, Inc.
Concord, CA

AT&T
Louisville, KY

Analyst International

IBM Corporation
Research Triangle Park, NC

IBM/ISSC Corp.
Lexington, KY

General Assembly
State of Tennessee
Director MIS
G-9 WMB
Nashville, TN

Computer Data Professionals
Glasgow, KY

Intergraph Corp.
Huntsville, AL

DAZIX, An Intergraph Company
Huntsville, AL

Toyota Motor Manufacturing
Georgetown, KY

Florist Transworld Delivery-Floral Network Division
Downers Grove, IL

Image Sciences, Inc.
Dallas, TX

Computer Services, Inc.
Elizabethtown, KY

W.K.U.

Service Merchandise, Inc.
Brentwood, TN

Department of Defense
Fort Meade, MD

Martin Marietta Energy Systems
Oak Ridge, TN

Citizens Federal Bank
Dayton, OH

Henderman Management Services
Louisville, KY

E-Systems
Garland, TX

Ricoh Corporation
West Caldwell, NJ

Electronic Data Systems

U.S. Army
Air Force Institute of Technology
Wright-Patterson AFB, OH

Veritas Software Corporation
Santa Clara, CA

NASA
Rockville, MD

Boeing Computer Support Services

Brown & Williamson Tobacco Corporation
Louisville, KY

United States Air Force

Compuware
Columbus, OH

BellSouth Telecommunications, Inc.
Birmingham, AL

Average yearly salary: $41,156.92

38. What is your current annual salary if you have a full-time job?

_____

39. What is your current salary in dollars per hour if you have a part-time job?

_____

WKU—Printing paid from state funds, KRS 57.375.